

Description of a new porcellanid, *Petrolisthes gertrudae* from the southeastern Caribbean Sea (Crustacea: Decapoda: Porcellanidae)

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Abstract.—A new species of the genus *Petrolisthes* Stimpson, 1858, *P. gertrudae*, from the West Indies is described. The new species belongs to a group of *Petrolisthes* species characterized by the complete lack of spines on the carapace and pereopods 1–5. The new species can be easily distinguished from other species of that group by the convex shape of the carpal lobe of the chelipeds, and by the pubescence which covers the outer margins of the chelae.

The porcellanid fauna of the Caribbean Sea can be considered fairly well known, and has been documented in a series of publications treating species from the southern Caribbean (Gore 1970, 1974, 1982; Gore & Abele 1973, 1976; Werding 1977, 1978a, 1978b, 1982, 1986). Werding (1986) considered the species inventory of the western Atlantic as almost complete. A total of 43 species is now known from the western Atlantic, including three endemics from the coast of Brazil.

The study of collections in the National Museum of Natural History, Smithsonian Institution, revealed the presence of an undescribed species from the southeastern Caribbean. The specimens were collected by P. Hummelinck in 1931, at Bonaire (Dutch West Indies), and by W. L. Schmitt in 1956, at Guadeloupe (French West Indies).

All type specimens are deposited in the National Museum of Natural History, Smithsonian Institution, Washington, D.C. (USNM). The measurements given refer to carapace length (CL) and carapace width (CW) respectively.

Family Porcellanidae

Petrolisthes gertrudae, new species

Figs. 1, 2

Material.—Holotype: ovigerous female, Guadeloupe, West Indies, Pointe à Pitre,

Rat Islands, exposed reef, submerged weedy rock, Smithsonian Bredin Caribbean Expedition, 30 Mar 1956, leg. W. L. Schmitt USNM 275965. Paratypes: 1 ovigerous female, same data as holotype USNM 275966; 1 ovigerous female, Bonaire, West Indies, Kralandijk, in colonies of *Zoanthus sociatus*, 31 Oct 1930, leg. P. Hummelinck USNM 275967.

Measurements.—Holotype: CL 3.38 mm, CW 3.51 mm. Paratype from Guadeloupe: CL 4.29 mm, CW 4.35 mm; paratype from Bonaire: CL 3.45 mm, CW 3.64 mm.

Range of length/width of carpus of cheliped: 1.35–1.44; range of egg diameter: 0.65–0.72 mm.

Description.—Carapace subquadrate and about as long as broad; lateral margins nearly parallel behind epibranchial angle. Surface almost smooth, without setae, covered anteriorly with fine granules and behind epibranchial angle with fine plicae; grooves marking regions distinct. Frontal region strongly deflexed, produced, slightly trilobate, median lobe broad, triangular with shallow median groove. Flanks between side walls and legs with fringe of plumose setae. Orbits shallow, outer orbital angle slightly produced. No epibranchial spine.

Inner part of ocular peduncle expanded to a longitudinal crest.

First movable segment of antennae an-

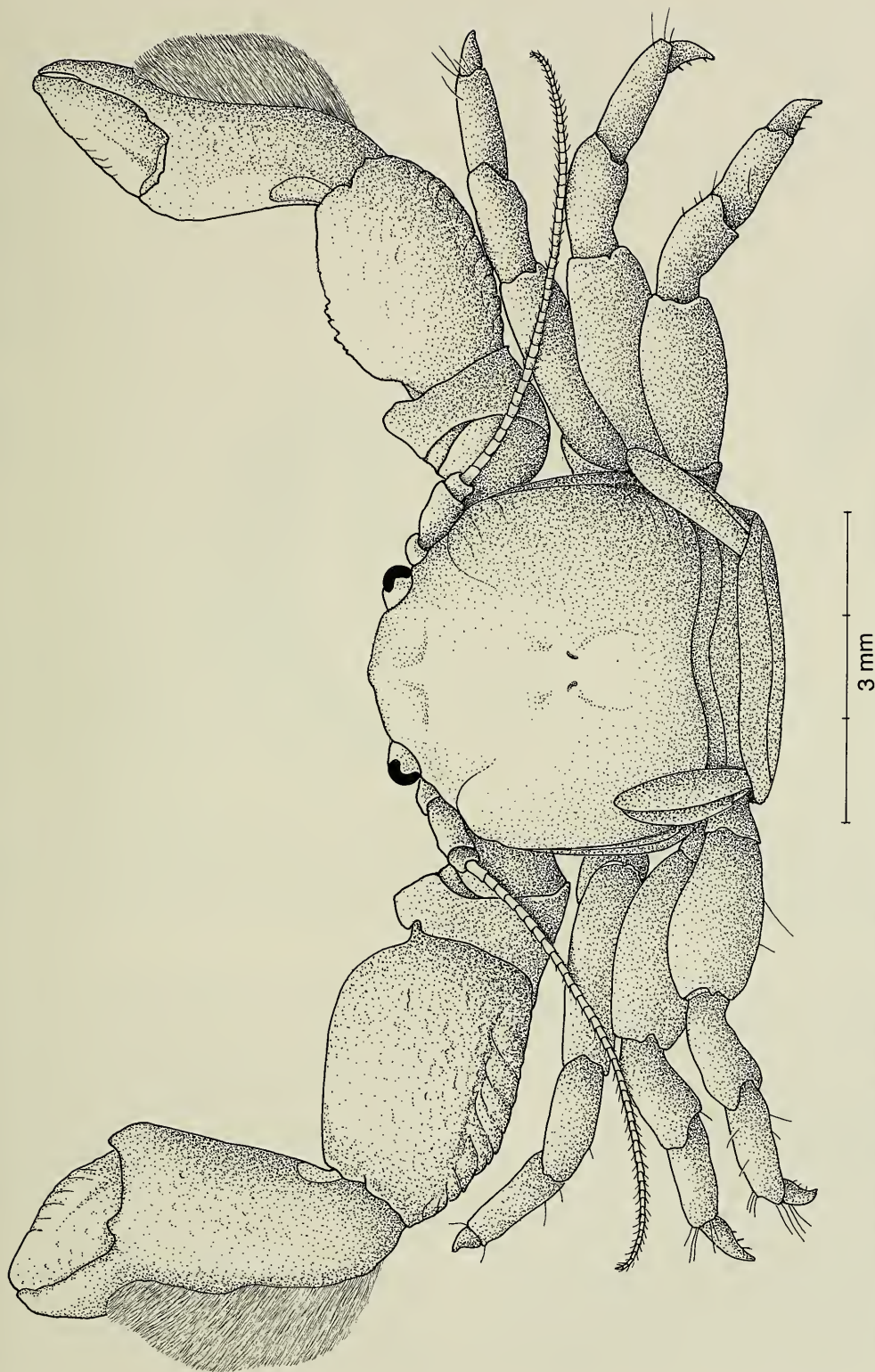


Fig. 1. *Petrolisthes gertrudae*, new species. Female holotype from Guadeloupe, West Indies, dorsal view USNM 275965.

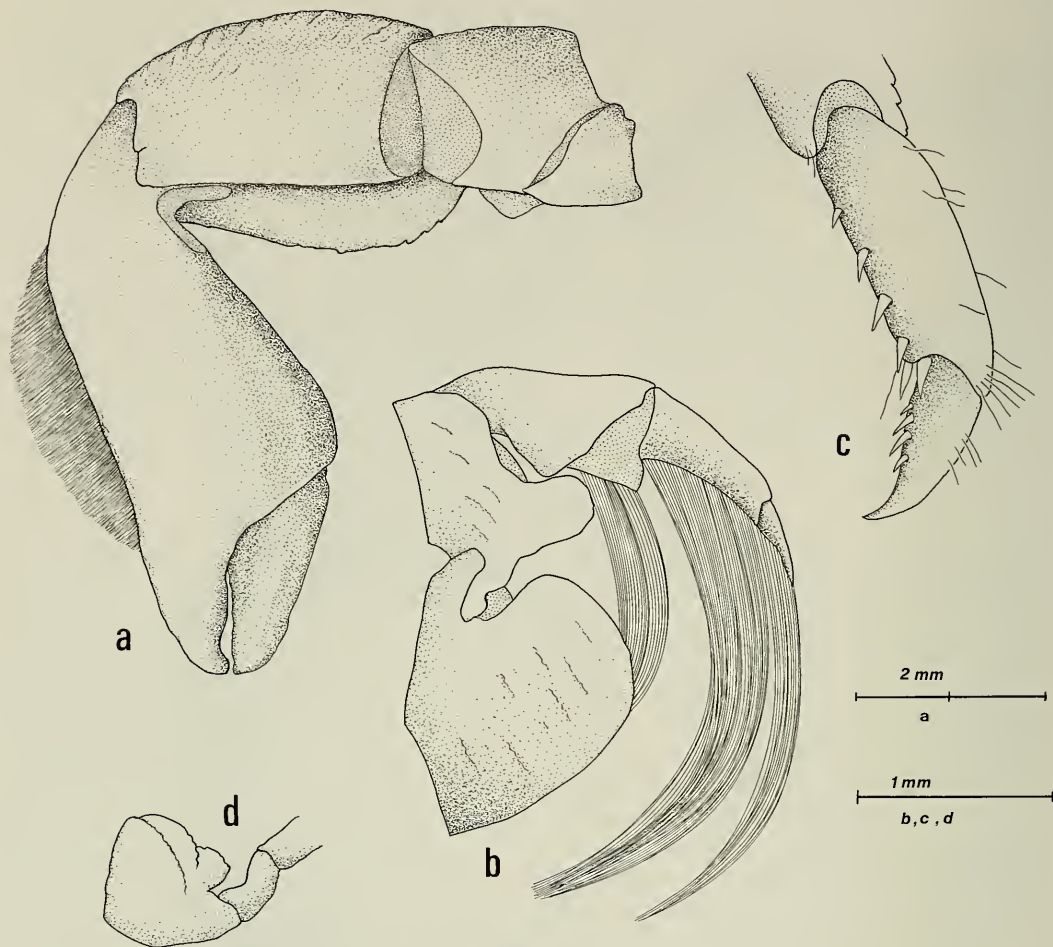


Fig. 2. *Petrolisthes gertrudae*, new species. Female paratype from Guadeloupe, West Indies USNM 275966. a, left cheliped ventral view; b, right third maxilliped, external view; c, propodus and dactylus of first right walking leg, ventral view; d, basal segment of right antennula, ventral view.

teriorly extended to form low, granular crest; second irregularly granulate; third nearly smooth. Flagellum thick, setose. Outer surface of ischium of third maxilliped slightly rugose.

Chelipeds subequal; merus and carpus without setae, dorsal surface with large flattened granules. Merus with broad granular lobe on anterior margin. Carpus less than $\frac{1}{2}$ as long as wide, anterior margin extended, forming rounded lobe, strongly convex at proximal $\frac{2}{3}$; proximal portion sometimes armed with fine, irregular denticulation along edge; with shallow longitudinal

groove marking broad rounded crest on dorsal surface near the posterior margin, crest composed of large transversally oriented granules; outer distal angle rounded. Surface of manus with similar granulation, upper side with large longitudinal elevation extending to gape of fingers; outer border with longitudinal depression, forming rounded crest at outer margin; outer margin distally straight or slightly curved outward, pollex bent upward; with thick tuft of long feathered setae covering outer margin leaving free only proximal portion and distal half of pollex. Fingers curved at tips, cut-

ting edges without prominent teeth, fingers meeting for entire length or slightly gaping, gape lacking pubescence.

Walking legs with surface granulation similar to that of chelipeds; unarmed, with scattered plumose setae. Propodus with 3 movable spines distally, and 2 or 3 additional ones on inner margin varying inconsistently among legs. Dactylus with 4 movable spines on inner margin.

Abdomen with dense fringe of plumose setae on entire outer margin; telson consisting of 7 plates.

Variations.—The paratype specimen from Bonaire exhibits a more accentuated granulation on the surface of the carapace, and specially at the extremities, than the two specimens from Guadeloupe. The anterior lobe of the carpus of the chelipeds is somewhat depressed by a longitudinal groove.

Habitat.—The specimen collected by P. Hummelinck was found in a colony of the zoanthid *Zoanthus sociatus* Ellis, a species which settles on the wave surf zone of the rocky intertidal. The specimens by W. L. Schmitt were found on an exposed reef. The species seems to be confined to the upper littoral.

Etymology.—The species is named in honor of my wife, Mrs. Gertrud Werding, for her help and understanding during all the years that I have been working on crustaceans.

Discussion

Petrolisthes gertrudae, new species, belongs to a group of species which is mainly confined to the eastern Pacific, where it is represented by 17 tropical and temperate species (Haig 1960). The group is characterized by the complete lack of spines on the carapace and pereopods, including the chelipeds. The carpus of the chelipeds is unarmed, with the exception of minute spinules in some species. The group was represented until now in the western Atlantic by *P. quadratus* Benedict, *P. tridentatus*

Stimpson, and *P. tonsorius* Haig. The new species is clearly distinguished from all other species of the group by the convex lobe of the anterior margin of the carpus of the chelipeds which, in some cases, is slightly dentate, and the dense pubescence on the outer border of the manus absent in other representatives of the group.

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